

REMARKS

Claims 1-61 are pending in the present application. No claims are being amended.

I. Allowable Claims 5, 6, 15, 23 and 29

Applicants thank the Examiner for the indication of allowable subject matter in Claims 5, 6, 15, 23 and 29. Applicants elect at this time to defer resolution of claims 5, 6, 15, 23 and 29 until resolution regarding the other claims as well.

II. Provisional Rejection of Claims 1-61 Under the Judicially Created Doctrine of Obviousness-Type Double Patenting

The Examiner has rejected claims 1-61 under the judicially created doctrine of obviousness-type double patenting as being allegedly unpatentable over claims 1-45 of U.S. Patent Application No. 10/873,656; over claims 1-58 of U.S. Patent Application No. 10/077,365; over claims 1-58 of U.S. Patent Application No. 10/785,313; and over claims 1-21 of U.S. Patent Application No. 10/139,873. Applicant respectfully disagrees and asserts that claims 1-61 are not unpatentable over the cited U.S. Patent Applications under the judicially created doctrine of obviousness-type double patenting. However, to expedite prosecution, Applicants submit a disclaimer of the portion of the term of the present patent application (when issued as a patent) that exceeds the term of the patents issuing from U.S. Patent Application Nos. 10/873,656; 10/077,365; 10/785,313; and 10/139,873.

III. 35 USC § 103: Rejections of Claims 1-4, 7-14, 16-22, 24-28 and 30-61

The Examiner rejected claims 1-4, 7-14, 16-22, 24-28 and 30-61 under 35 U.S.C. §103(a) as allegedly being unpatentable in view of Owens et al. (US Patent No. 5,481,611) in view of Bolin et al. (US Patent Publication No. 2005/0047514). This rejection is traversed as follows.

The basic requirements of a prima facie case of obviousness under 35 USC § 103 are: (1) there must be some suggestion or motivation to modify the reference or to combine the reference teachings; (2) there must be a reasonable expectation of success in modifying the reference or combining the references; and (3) the prior art must teach or suggest all the claim limitations. MPEP § 2143.

Claim 1 recites:

Apparatus for requesting authentication comprising:
a storage medium configured to store a cryptographic key;

a processor coupled to the storage medium and configured to generate an access code using the cryptographic key;

a converter coupled to the processor and configured to convert the access code into sound waves encoded with the access code, **the converter encoding the access code into sound waves using multicarrier modulation**; and

an audio output unit coupled to the converter and configured to output the sound waves encoded with the access code for authentication.

(Emphasis added.)

Applicants submit that neither Owens nor Bolinith disclose at least the claimed subject matter of “the converter encoding the access code into **sound waves using multicarrier modulation**”. (Claim 1, emphasis added).

Owens describes an authentication procedure in which a random digital code is encoded for transmission into a representative audio signal. However, it teaches using DTMF signaling format to encode the digital signal into a sequence of DTMF tones (See col. 3, line 60 to col. 4, line 18). Accordingly, Applicants agree with the Examiner that Owens does not teach or suggest “the converter encoding the access code into sound waves using multicarrier modulation”.

However, Applicants disagree with the Examiner’s characterization of Bolinith. Applicants assert that Bolinith does not teach or suggest “the converter encoding the access code into sound waves using multicarrier modulation”. Bolinith describes parallel concatenated encoding and modulation in an electromagnetic communication system using an orthogonal frequency division multiplexing (OFDM) as a multi-carrier modulation. Paragraphs 20 and 26. Bolinith does not teach or suggest a **multi-carrier sound wave** communication.

Further, while Owens uses DTMF tone transmission, it should be noted that DTMF tone transmission is not transmission of an actual sound wave. DTMF tone transmission includes converting the DTMF tones into a digital representation coded for transmission over the channel (wire or air interface). As such, DTMF transmission is not sound wave transmission. For example, “the communication paths between the host and the subscriber site are not limited to a PSTN but may include any form of voice-band cellular radio telephone link or other suitable transmission media.” Owens, Col. 5, lines 55-58. Owens teaches using DTMF tones over a PSTN as a primary implementation. PSTN is a wireline electromagnetic communication. Sound waves are not actually sent. Similarly, Owens suggests that a voice-band cellular radio telephone

link or other suitable transmission media may be used. Owens envisions suitable transmission media that are all electromagnetic communications, whether wireline or wireless. Never is transmission of an actual sound wave envisioned or suggested.

Bolinth is also directed to electromagnetic communications, and in no way teaches or suggests transmitting sound waves, let alone multicarrier sound waves. Therefore, since the combination of Bolinth and Owens do not teach or suggest the claimed invention, claim 1 is patentable.

Applicants also assert that even if Owens and Bolinth combined did teach or suggest the claimed subject matter, there is no motivation of suggestion to combine the references, and further that there is no likelihood of success of combining the references.

For at the reasons described above, Applicants respectfully request reconsideration and an allowance of Claim 1 and Claims 2-4 and 7-10 which depend from Claim 1.

Independent Claims 11, 19, 27, 30, 41, 50 and 59 each claim sound waves using multicarrier modulation. Accordingly, Applicants respectfully request reconsideration and allowance of claims 11-14, 16-22, 24-28 and 30-61 at least for the reasons described above with respect to Claim 1.

IV. Other References

Applicants have reviewed the references made of record and assert that the claimed invention is patentably distinct from the references mad of record.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicants submit that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

CONCLUSION

Applicants respectfully request a two-month extension of time to file the Response to the Non-Final Office up to and including February 20, 2007. The Commissioner is hereby authorized to charge Deposit Account 17-0026 the requisite \$450.00 fee associated with the two-month extension of time. The Commissioner is hereby authorized to charge Deposit Account 17-0026 any other fees that may be associated with this filing.

Respectfully submitted,

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By: 

David J. Huffaker, Reg. No. 56,771
(858) 845-2110

QUALCOMM Incorporated
5775 Morehouse Drive
San Diego, California 92121
Telephone: (858) 658-5787
Facsimile: (858) 658-2502